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ABSTRACT

In an effort to obtain systematic information concerning environmentally-oriented instruction and research programs at state universities, the Council on Research Policy and Administration of the National Association of State Universities and Land Grant Colleges developed a questionnaire for this purpose. The objectives were to obtain information on (1) university organization for administration of environmental science academic programs, (2) instructional activities in environmental science areas, and (3) the nature and magnitude of interdisciplinary research progrqms currently operative. Responses from 85 out of 100 universities surveyed indicate that 62 have some sort of academic units established. Six listed a School of Environmental Science and seven listed a Department of Environmental Science. It was concluded most institutions apparently have developed interdisciplinary programs within their normal disciplinary school and department structure. The most frequently listed interdisciplinary research unit was Water Resources with 50 listings. Next most frequent was urban/regional planning (39), followed by air resources (29), marine resources (27), and environmental health (26). The largest units, based on the number of faculty and graduate students and dollar support, were Water Resources, Marine Resources, Urban and Regional Planning, and Environmental Health. Four tables tabulate the individual data. A sample questionnaire is not included. (BL)

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ENVIRONMENTAL EDUCATION AND RESEARCH PROGRAMS AT STATE UNIVERSITIES

Roy A. Young

In discussions in 1970 it became evident to members of the Council on Research Policy and Administration of the National Association of State Universities and Land Grant Colleges that little systematic information was available concerning environmentally oriented instruction and research programs at state universities.

Conversations with representatives of several federal agencies and the Planning Committee for the 1972 United Nations Conference on the Human Environment in Stockholm showed almost complete lack of awareness of the rather extensive research efforts in environmental science areas at a number of universities.

In an effort to obtain information on interdisciplinary environmental education and research programs at state universities, a committee[1] was appointed to develop a questionnaire to be circulated by mail and to organize the results of the survey for presentation to CRPA membership.

The objectives of the questionnaire were to obtain information on (1) university organization for administration of environmental science academic programs, (2) instructional activities in environmental science areas, and (3) the nature and magnitude of interdisciplinary research programs currently operative on campuses of state universities.

The questionnaire was addressed to Vice Presidents for Research, Deans for Research or other administrative officers responsible for research coordination and administration at state universities.

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[1] Fred N. Andrews, Vice President for Research and Dean of the Graduate School, Purdue University
Ralph W. Cummings, Administrative Dean for Research, North Carolina State University at Raleigh
John E. Nellor, Associate Vice President for Research Development, Michigan State University
Roy A. Young, Vice President for Research and Graduate Studies, Oregon State University

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Two surveys were made. The first survey was conducted in the Spring of 1971 and results were tabulated in early summer. Originally it was planned that these results would be summarized and distributed at the 1971 meeting of the Council on Research Policy and Administration. However, a review of results indicated a number of discrepancies in information supplied by several universities. We, therefore, decided not to distribute the results of the first questionnaire, but to attempt to improve the questionnaire and circulate the revised form to all state universities in the Spring of 1972.

In 1972 questionnaires were mailed to 100 universities and responses were obtained from 85. This report summarizes information obtained in the two surveys.

A number of universities indicated that the format of the questionnaire did not provide an opportunity for them to present a complete picture of the effort in environmental sciences on their individual campuses. Also, several institutions responded that, rather than setting up separate units for environmental science, both instructional and research efforts had been integrated into instructional and research efforts in disciplinary departments.

The information obtained from the questionnaires is tabulated in the following four tables. Because there are some inconsistencies in reports from institutions, respondents may wish to correct this draft before it is reproduced and distributed by NASULGC. Table 1 indicates whether or not institutions responded to the questionnaires in 1971 and 1972 and indicates whether or not academic units were established on the respondent's campuses.

Sixty-two of the 85 universities responding indicated that they have some sort of academic units established. Only six, however, listed a School of Environmental Science and only seven listed a Department of Environmental Science. Most institutions apparently have developed interdisciplinary programs within their normal disciplinary school and departmental structure.

Eight institutions that had no established academic units in 1971 reported a unit in 1972. Of the eight, only one was a School of Environmental Science. The others were institutes or programs.

Table 2 indicates the presence or absence of listed interdisciplinary research units on campuses of the responding institutions in 1971-72.

Table 3 presents a summary of the numbers of institutions with various interdisciplinary research units, information on numbers of faculty and graduate students, and dollar support for each different research unit in 1971.

Table 4 presents similar information for 1972.

The most frequently listed interdisciplinary research unit was Water Resources with 50 listings. Next most frequent was urban/regional planning (39), followed by air resources (29), marine resources (27) and environmental health (26).

The largest units based on faculty FTE and numbers of graduate students were Water Resources, Marine Resources, Urban and Regional Planning, and Environmental Health.

Many institutions are still in the process of attempting to determine the most suitable organizational structure to meet their needs for increased emphasis on instruction and research in different areas of the environmental sciences. It is hoped that the information from this survey will be useful to institutions still in the process of reviewing models for environmental science programs, we well as to other institutions, federal agencies, and foundations.

mep
11/7/72

Table 1. Responses of State Colleges and Universities to Questionnaire Regarding Environmental Science Academic Units Established in 1971 and 1972

Name of College or University	Responded to Questionnaire: No 1971	No 1972	Yes 1971	Yes 1972	No Academic Unit 1971	No Academic Unit 1972	School or College of Environmental Science 1971	School or College of Environmental Science 1972	School or Department of Human Ecology 1971	School or Department of Human Ecology 1972	Department of Environmental Science 1971	Department of Environmental Science 1972	Environmental Science Institute 1971	Environmental Science Institute 1972	Environmental Science Center 1971	Environmental Science Center 1972	Environmental Studies Center 1971	Environmental Studies Center 1972	Environmental Health Sciences Center 1971	Environmental Health Sciences Center 1972	Environmental Studies Program 1972	Institute of Ecology 1972	Environmental Quality Center 1972	Institute for Natural Resources 1972	Any Other Academic Unit 1971	Any Other Academic Unit 1972	Total Units Established 1971	Total Units Established 1972
Alabama A&M University		X																										
Auburn University			X	X	X	X																					0	0
University of Alabama	X			X		X																						
University of Alaska	X			X																						X		
Arizona State University			X	X									X		X												1	1
University of Arizona	X			X																						X		
Arkansas A, M & N University		X																										
University of Arkansas			X	X		X																			X		1	1
U. of California-Berkeley		X	X		X																						0	0
U. of California-Davis			X	X			X														X				X	X	2	2
U. of California-Santa Cruz			X	X												X					X					X	1	1
U. of California-Santa Barbara			X	X					X												X						1	1
U. of California-Los Angeles			X	X								X													X	X	2	2

of State Colleges and Universities to Questionnaire Regarding Environmental Science Academic
blished in 1971 and 1972

| Responded to Questionnaire | | |

Name of College or University	Responded to Questionnaire 1971	Responded to Questionnaire 1972	1971 No Academic Unit Established	1972 No Academic Unit Established	1971 School or College of Environmental Science	1972 School or College of Environmental Science	1971 School or Department of Human Ecology	1972 School or Department of Human Ecology	1971 Department of Environmental Science	1972 Department of Environmental Science	1971 Environmental Science Institute	1972 Environmental Science Institute	1971 Environmental Science Center	1972 Environmental Science Center	1971 Environmental Studies Center	1972 Environmental Studies Center	1971 Environmental Health Sciences Center	1972 Environmental Health Sciences Center	1972 Environmental Studies Program	1972 Institute of Ecology	1972 Environmental Quality Center	1972 Institute for Natural Resources	1971 Any Other Academic Unit	1972 Any Other Academic Unit	1971 Total Units Established by College or University	1972 Total Units Established by College or University
U. of California-Irvine		X						X	X														X	X	2	1
U. of California-Riverside		X				X																			1	1
U. of California-San Diego		X		X																					0	0
Colorado State University		X											X	X											1	1
University of Colorado		X		X																					0	0
Connecticut Ag. Exp. Sta.		X																					X	X	1	1
University of Connecticut		X				X																			1	1
Delaware State College	X	X																							0	0
University of Delaware		X													X	X							X		2	1
Florida State University	X	X	X																						1	0
University of Florida		X																					X	X	1	1
Georgia Institute of Technology		X																				X		X	1	1
University of Georgia	X	X								X										X		X	X	X	1	5

Name of Respondent First Name - 1971 Second Name - 1972	1971 Total Units Established by College or University 1972	1971 Any Other Academic Unit 1972	1972 Institute for Natural Resources	1972 Environmental Quality Center	1972 Institute of Ecology	1972 Environmental Studies Program	1971 Environmental Health Sciences Center 1972	1971 Environmental Studies Center 1972	1971 Environmental Science Center 1972	1971 Environmental Science Institute 1972	1971 Department of Environmental Science 1972	1971 School or Department of Human Ecology 1972	1971 School or College of Environmental Science 1972	1971 No Academic Unit Established 1972	Responded to Questionnaire 1971 No 1972 No	Responded to Questionnaire 1971 Yes 1972 Yes
Roger W. Russell Carl Hartman	2 1	X X									X					X X
Seymour Van Gundy	1 1												X X			X X
R. Pearce	0 0											X X				X X
N. A. Evans	1 1								X X							X X
J. Russell Nelson	0							X		X				X		X
Paul E. Waggoner	1 1	X X													X X	
Hugh Clark	1 0												X X	X		
Olaf P. Bergelin	2 1	X						X							X X	
Robert M. Johnson	0													X	X X	
George K. Davis	1 1	X X													X X	
C. E. Kindsvater	1 1	X	X												X X	
Robert C. Anderson	1 5	X X	X		X					X	X				X X	

Name of College or University	Responded to Questionnaire: 1971	1972	1971 No Academic Unit Established	1972 No Academic Unit Established	1971 School or College of Environmental Science	1972 School or College of Environmental Science	1971 School or Department of Human Ecology	1972 School or Department of Human Ecology	1971 Department of Environmental Science	1972 Department of Environmental Science	1971 Environmental Science Institute	1972 Environmental Science Institute	1971 Environmental Science Center	1972 Environmental Science Center	1971 Environmental Studies Center	1972 Environmental Studies Center	1971 Environmental Health Sciences Center	1972 Environmental Health Sciences Center	1972 Environmental Studies Program	1972 Institute of Ecology	1972 Environmental Quality Center	1972 Institute for Natural Resources	1971 Any Other Academic Unit	1972 Any Other Academic Unit	1971 Total Units Established by College or University	1972 Total Units Established by College or University
University of Hawaii		X																					X	X	1	1
University of Idaho		X		X																					0	0
University of Illinois		X																	X	X			X	X	0	0
Indiana University		X				X																			1	1
Purdue University		X								X													X		1	1
Iowa State University		X		X																			X		0	1
University of Iowa		X		X																					0	0
Kansas State University		X									X												X		1	1
University of Kansas		X										X					X						X	X	2	2
Kentucky State College		X		X																					0	0
University of Kentucky	X	X		X																					0	0
Louisiana State University	X	X										X											X	X	2	2
Southern University	X	X																							0	0

Name of Respondent First Name - 1971 Second Name - 1972	Responded to Questionnaire 1971 No 1972 No	 1971 Yes 1972 Yes	1971 No Academic Unit Established 1972	1971 School or College of Environmental Science 1972	1971 School or Department of Human Ecology 1972	1971 Department of Environmental Science 1972	1971 Environmental Science Institute 1972	1971 Environmental Science Center 1972	1971 Environmental Studies Center 1972	1971 Environmental Health Sciences Center 1972	1972 Environmental Studies Program	1972 Institute of Ecology	1972 Environmental Quality Center	1972 Institute for Natural Resources	1971 Any Other Academic Unit 1972	1971 Total Units Established by College or University 1972
Jerry M. Johnson		X													X	1 1
R. W. Stark		X													X	1 1
Edgar Grahm		X														0 0
Roger G. Clark		X	X								X	X			X	0
John Pearson		X	X													
Lynne L. Merritt		X		X												1 1
F. N. Andrews		X					X								X	1 1
D. J. Zaffarano		X	X												X	0 1
John McBride		X								X						0 0
Frank Horton		X														0 0
R. F. Kruh		X						X							X	1 1
William Argersinger, Jr.		X	X					X		X					X	2 2
Carl M. Hill		X	X													0 0
A. J. Richards		X	X													0 0
W. H. Dennem		X		X												0
J. R. Walker		X	X					X							X	2
Sidney McNairy, Jr.		X														0

Name of College or University	Responded to Questionnaire: 1971 No	1972 No	1971 Yes	1972 Yes	1971 No Academic Unit Established	1972 No Academic Unit Established	1971 School or College of Environmental Science	1972 School or College of Environmental Science	1971 School or Department of Human Ecology	1972 School or Department of Human Ecology	1971 Department of Environmental Science	1972 Department of Environmental Science	1971 Environmental Science Institute	1972 Environmental Science Institute	1971 Environmental Science Center	1972 Environmental Science Center	1971 Environmental Studies Center	1972 Environmental Studies Center	1971 Environmental Health Sciences Center	1972 Environmental Health Sciences Center	1972 Environmental Studies Program	1972 Institute of Ecology	1972 Environmental Quality Center	1972 Institute for Natural Resources	1971 Any Other Academic Unit	1972 Any Other Academic Unit	1971 Total Units Established by College or University	1972 Total Units Established by College or University
University of Maine			X	X													X	X								1	1
University of Maryland			X	X					X	X														X	X	X	1	3
University of Maryland, Eastern Shore	X	X																										
Massachusetts Institute of Tech.	X	X									X	X													X	X	1	1
University of Massachusetts			X	X																					X	X	2	1
Wayne State University	X				X																						0	0
Michigan State University			X	X					X	X													X				1	2
University of Michigan			X	X																	X			X	X	X	1	4
University of Minnesota			X	X															X	X					X	X	0	0
Alcorn A&M University			X	X	X	X																			X	X	2	2
Mississippi State University			X	X															X	X						X	1	3
University of Mississippi			X	X																							0	0
University of Missouri			X	X	X	X					X	X													X	X	3	4

versity	Responded to Questionnaire: No 1971	No 1972	Yes 1971	Yes 1972	No Academic Unit Established 1971	1972	School or College of Environmental Science 1971	1972	School or Department of Human Ecology 1971	1972	Department of Environmental Science 1971	1972	Environmental Science Institute 1971	1972	Environmental Science Center 1971	1972	Environmental Studies Center 1971	1572	Environmental Health Sciences Center 1971	1972	Environmental Studies Program 1972	Institute of Ecology 1972	Environmental Quality Center 1972	Institute for Natural Resources 1972	Any Other Academic Unit 1971	1972	Total Units Established by College or University 1971	1972	Name of Respondent (First Name - 1971, Second Name - 1972)
			X	X													X	X									1	1	F. P. Eggert B. R. Poulton
			X	X						X														X	X	1	3	Michael Pelzar, Jr.
, Eastern Shore		X																											
e of Tech.		X	X																						X		1		Louis Menand III
setts			X	X								X													X	X	2	1	Pat W. Camerino Ervin H. Zube
.	X			X		X																						0	Ralph Kummler
ity			X	X						X	X												X				1	2	John E. Nellor
			X	X																	X		X	X	X	X	1	4	William C. Jolly
a			X	X															X				X		X	X	2	2	Richard Meyer Anne Wirt
			X	X	X	X																					0	0	Jesse Morris
ersity			X	X									X	X			X									X	1	3	J. C. McKee
ppi			X	X	X	X																					0	0	Joseph Sam
			X	X					X	X		X			X				X				X		X		3	4	Carl Marienfeld

Name of College or University	Responded to Questionnaire: 1971 No	1972 No	1971 Yes	1972 Yes	1971 No Academic Unit	1972 Established	1971 School or College of Environmental Science	1972	1971 School or Department of Human Ecology	1972	1971 Department of Environmental Science	1972	1971 Environmental Science Institute	1972	1971 Environmental Science Center	1972	1971 Environmental Studies Center	1972	1971 Environmental Health Sciences Center	1972	1972 Environmental Studies Program	1972 Institute of Ecology	1972 Environmental Quality Center	1972 Institute for Natural Resources	1971 Any Other Academic Unit	1972	1971 Total Units Established by College or University	1972	
Montana State University	X	X																										
University of Montana			X	X													X							X		1	1	Jo
University of Nebraska			X	X																			X	X	X	1	2	W. Ja
University of Nevada	X			X		X																					0	T.
University of New Hampshire			X	X																			X	X		1	1	Ro Jo
Rutgers University	X			X				X				X					X								X		4	Le
New Mexico State University			X	X	X																				X	0	1	W. Jo
University of New Mexico	X	X																										
Cornell University			X	X	X	X																				0	0	W.
North Carolina A&T State University			X	X	X	X																				0	0	Ho
North Carolina State University		X																										
University of North Carolina	X			X								X															1	Ge
North Dakota State University			X	X	X	X																				0	0	Ro

Name of Respondent First Name - 1971 Second Name - 1972	Total Units Established by College or University 1971 1972	Any Other Academic Unit 1971 1972	Institute for Natural Resources 1972	Environmental Quality Center 1972	Institute of Ecology 1972	Environmental Studies Program 1972	Environmental Health Sciences Center 1971 1972	Environmental Studies Center 1971 1972	Environmental Science Center 1971 1972	Environmental Science Institute 1971 1972	Department of Environmental Science 1971 1972	School or Department of Human Ecology 1971 1972	School or College of Environmental Science 1971 1972	No Academic Unit Established 1971 1972	Responded to Questionnaire 1971 No 1972 No	Responded to Questionnaire 1971 Yes 1972 Yes
John M. Stewart	1 1	X						X							X X	
W. H. Bruning James Drew	1 2	X X	X													X X
T. W. O'Brien	0													X	X	
Robert N. Faiman John Ezaba	1 1	X	X													X X
Leland Merrill, Jr.	4	X									X		X		X	
W. P. Stephens John Hernandez	0 1	X												X	X	
W. K. Kennedy	0 0													X	X	
Howard F. Robinson	0 0													X X		X X
George Holcomb	1										X				X	
Robert Sullivan	0 0													X X		X X

Name of College or University	Responded to Questionnaire 1971	Responded to Questionnaire 1972	1971 No Academic Unit Established	1972 No Academic Unit Established	1971 School or College of Environmental Science	1972 School or College of Environmental Science	1971 School or Department of Human Ecology	1972 School or Department of Human Ecology	1971 Department of Environmental Science	1972 Department of Environmental Science	1971 Environmental Science Institute	1972 Environmental Science Institute	1971 Environmental Science Center	1972 Environmental Science Center	1971 Environmental Studies Center	1972 Environmental Studies Center	1971 Environmental Health Sciences Center	1972 Environmental Health Sciences Center	1972 Environmental Studies Program	1972 Institute of Ecology	1972 Environmental Quality Center	1972 Institute for Natural Resources	1971 Any Other Academic Unit	1972 Any Other Academic Unit	1971 Total Units Established by College or University	1972 Total Units Established by College or University
University of North Dakota		X																					X	X	1	1
Kent State University		X																					X	X	1	1
Miami University		X									X	X											X	X	1	1
Ohio State University		X																				X	X	X	2	2
Ohio University		X		X												X							X	X	1	1
University of Oklahoma		X		X		X		X								X		X							0	4
Langston University	X																									
Oklahoma State University		X		X								X													0	1
Oregon State University		X															X	X					X	X	2	3
University of Oregon		X		X				X										X	X						1	2
Pennsylvania State University		X					X	X													X				0	1
University of Puerto Rico		X																								
University of Rhode Island	X	X																		X			X		1	

Name of Respondent First Name - 1971 Second Name - 1972	1971 Total Units Established by College or University 1972	1971 Any Other Academic Unit 1972	1972 Institute for Natural Resources	1972 Environmental Quality Center	1972 Institute of Ecology	1972 Environmental Studies Program	1971 Environmental Health Sciences Center 1972	1971 Environmental Studies Center 1972	1971 Environmental Science Center 1972	1971 Environmental Science Institute 1972	1971 Department of Environmental Science 1972	1971 School or Department of Human Ecology 1972	1971 School or College of Environmental Science 1972	1971 No Academic Unit Established 1972	Responded to Questionnaire 1971 No 1972 No	Responded to Questionnaire 1971 Yes 1972 Yes
A. W. Johnson	1 1 1	X			X											
Alan Coogan	1 1 1	X X														
William Gealy Jules B. LaPidus	1 2 1	X X	X													
N. S. Cohn	1 0 1	X														
Murlin Hodgell	0 4 0			X		X	X	X				X	X	X		
Marvin T. Edmison	0 1 0					X				X				X		
Roy A. Young	2 3 2	X X				X	X					X		X		
R. M. Mazo Stanton A. Cook	0 1 0					X	X					X		X		
Richard Schein	1 2 1	X		X								X X	X			
Salvador Rodriguez	1 1 1	X														

Name of College or University	Responded to Questionnaire		No Academic Unit Established	School or College of Environmental Science	School or Department of Human Ecology	Department of Environmental Science	Environmental Science Institute	Environmental Science Center	Environmental Studies Center	Environmental Health Sciences Center	Environmental Studies Program	Institute of Ecology	Environmental Quality Center	Institute for Natural Resources	Any Other Academic Unit	Total Units Established by College or University
	1971	1972	1971 1972	1971 1972	1971 1972	1971 1972	1971 1972	1971 1972	1971 1972	1971 1972	1972	1972	1972	1972	1971 1972	1971 1972
Clemson University	X	X	X												X	1 1
South Carolina State College	X	X	X													0 0
University of South Carolina	X	X	X												X	1 1
South Dakota State University	X	X	X								X					1 1
University of South Dakota	X	X					X		X							2 2
Tennessee State University	X	X	X													1 1
University of Tennessee	X	X													X X	1 1
Texas A&M University	X	X	X												X X	2 2
Prairie View A&M	X															0 0
Texas Technological University		X													X	1 1
University of Texas	X	X								X				X	X	3 3
Utah State University	X	X						X X				X		X	X	4 4
University of Utah	X	X	X X										X			2 2

Name of Respondent	First Name - 1971 Second Name - 1972	Total Units Established by College or University		Any Other Academic Unit		Institute for Natural Resources		Environmental Quality Center		Institute of Ecology		Environmental Studies Program		Environmental Health Sciences Center		Environmental Studies Center		Environmental Science Center		Environmental Science Institute		Department of Environmental Science		School or Department of Human Ecology		School or College of Environmental Science		No Academic Unit Established		Responded to Questionnaire		
		1971	1972	1971	1972	1971	1972	1972		1972		1972		1971	1972	1971	1972	1971	1972	1971	1972	1971	1972	1971	1972	1971	1972	1971	1972	
A. E. Schwartz		1		X																								X		
R. L. Hurst		0	0																							X	X		X	
Milton S. Baker		0	1	X									X											X	X	X	X		X	
Paul Koepsell		0	1									X												X	X	X	X		X	
Webster Sill		1	1												X					X	X			X	X	X	X		X	
C. W. Sutherland		0																X	X											
Hilton A. Smut		1	1	X	X																									
W. A. Goodwin		1	1	X	X																									
A. D. Suttle, Jr.		0	0																											
Robert Berg		0	0																											
Orlo E. Childs				X																										
P. T. Flawn		1	3	X	X		X							X																
Wynne Thorne		1	3	X						X								X	X											
W. Partridge		0	0																							X	X			

| Name of College or University | Responded to Questionnaire | | |

| Responded to Questionnaire | | |

Table 2. Titles of Interdisciplinary Research Units Established at State Colleges and Universities in 1971 and 1972

Name of College or University	Air Resources		Water Resources		Mineral Resources		Marine Resources		Coastal Zone Mgt.		Nuclear Science		Environmental Health		Family Planning		Nutrition		Pesticides		Toxicology		Solid Waste Mgt.		Transportation		Human or Family Ecol.		Land Use		Community Design		Housing		Urban and/or Regional Planning		Noise-Acoustic Stress		Science & Pub. Policy		Recreation		Environmental Law		Urban Planning		Regional Planning	
	1971	1972	1971	1972	1971	1972	1971	1972	1971	1972	1971	1972	1971	1972	1971	1972	1971	1972	1971	1972	1971	1972	1971	1972	1971	1972	1971	1972	1971	1972	1971	1972	1971	1972	1971	1972	1971	1972	1971	1972	1971	1972	1971	1972
University of Alaska				X		X		X						X														X						X										
Arizona State University			X												X								X														X			X			
University of Arizona				X																																								
University of Arkansas	X		X		X						X		X		X		X		X		X		X				X		X			X				X		X	X		X	
U. of California-Davis	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X				X		X	X		X		X		X	
U. of California-Santa Cruz								X		X														X		X		X										X					
U. of California-Santa Barbara	X										X	X																																
U. of California-L.A.	X	X	X	X																				X		X	X																	
U. of California-Irvine			X	X			X	X	X	X			X	X	X	X								X	X	X	X	X	X				X				X	X			X	X	X	
U. of California-Riverside	X	X	X	X															X		X							X																
Colorado State University			X	X										X																														
Connecticut Ag. Exp. Sta.	X	X	X	X																			X	X											X	X								
University of Connecticut			X				X										X		X																									

Interdisciplinary Research Units Established at State Colleges and Universities in 1971 and 1972

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Name of College or University		Air Resources	Water Resources	Mineral Resources	Marine Resources	Coastal Zone Mgt.	Nuclear Science	Environmental Health	Family Planning	Nutrition	Pesticides	Toxicology	Solid Waste Mgt.	Transportation	Human or Family Ecol.	Land Use	Community Design	Housing	Urban and/or Regional Planning	Noise-Acoustic Stress	Science & Pub. Policy	Recreation	Environmental Law	Urban Planning	Regional Planning	Population Control	Environ. Resources	Remote Sensing
University of Delaware	1971	X	X	X	X	X				X	X	X	X	X		X			X			X						
	1972																											
University of Florida	1971	X	X	X	X	X	X		X	X	X	X	X	X					X	X								
	1972																											
Georgia Inst. of Technology	1971																											
	1972																											
University of Georgia	1971		X	X	X	X	X	X								X					X						
	1972																											
University of Hawaii	1971		X	X	X	X		X	X		X					X			X									
	1972																											
University of Illinois	1971	X					X								X													
	1972																											
Indiana University	1971		X	X				X	X	X		X	X	X														
	1972																											
Purdue University	1971	X	X	X	X	X	X		X	X	X	X	X	X														
	1972																											
Iowa State University	1971		X																									
	1972																											
Kansas State University	1971	X	X	X	X		X			X	X	X	X	X	X													
	1972																											
University of Kansas	1971		X	X	X			X																				
	1972																											
University of Kentucky	1971	X	X	X																								
	1972																											
Louisiana State University	1971	X	X		X	X	X	X																				
	1972																											
University of Maine	1971	X	X		X					X																		
	1972																											

1971 Air Resources
1972 Water Resources
1971 Mineral Resources
1972 Marine Resources
1971 Coastal Zone Mgt.
1972 Nuclear Science
1971 Environmental Health
1972 Family Planning
1971 Nutrition
1972 Pesticides
1971 Toxicology
1972 Solid Waste Mgt.
1971 Transportation
1972 Human or Family Ecol.
1971 Land Use
1972 Community Design
1971 Housing
1972 Urban and/or Regional Planning
1971 Noise-Acoustic Stress
1972 Science & Pub. Policy
1971 Recreation
1971 Environmental Law
1971 Urban Planning
1971 Regional Planning
1971 Population Control
1972 Environ. Resources
1972 Remote Sensing

		1 4	– 7	– 5	5 6	11 14	0 1	14 19	8 8	0 7	8 8	8 10	1 1	9 11	15 13
Air Resources	1971	X	X	X		X		X		X				X	X
	1972	X	X	X	X	X		X	X	X	X	X		X	X
Water Resources	1971	X	X	X	X	X	X	X	X	X	X	X		X	X
	1972	X	X	X	X	X	X	X	X	X	X	X		X	X
Mineral Resources	1971			X	X			X			X	X		X	
	1972			X	X			X			X	X		X	
Marine Resources	1971	X	X			X					X	X		X	X
	1972	X	X			X					X	X		X	X
Coastal Zone Mgt.	1971		X								X	X		X	X
	1972		X								X	X		X	X
Nuclear Science	1971		X			X		X		X		X		X	
	1972		X			X		X		X		X		X	
Environmental Health	1971		X		X	X		X	X		X	X			
	1972		X		X	X		X	X		X	X			
Family Planning	1971							X			X			X	
	1972							X			X			X	
Nutrition	1971	X				X		X	X					X	X
	1972	X				X		X	X					X	X
Pesticides	1971					X		X			X			X	X
	1972					X		X			X			X	X
Toxicology	1971					X		X	X						X
	1972					X		X	X						X
Solid Waste Mgt.	1971				X	X		X							X
	1972				X	X		X							X
Transportation	1971					X		X	X						X
	1972					X		X	X						X
Human or Family Ecol.	1971					X				X					
	1972					X				X					
Land Use	1971					X		X		X	X	X			X
	1972					X		X		X	X				X
Community Design	1971					X		X							
	1972					X		X							
Housing	1971							X							
	1972							X							
Urban and/or Regional Planning	1971		X	X	X	X		X	X		X	X		X	X
	1972		X	X	X	X		X	X		X	X		X	X
Noise-Acoustic Stress	1971					X		X						X	
	1972					X		X							
Science & Pub. Policy	1971							X	X			X			
	1972							X	X			X			
Recreation	1971							X		X		X			X
	1972							X		X		X			X
Environmental Law	1971				X				X						X
Urban Planning	1971					X									
Regional Planning	1971					X			X			X		X	X
Population Control	1971												X		
Environ. Resources	1972				X	X		X		X					
Remote Sensing	1972														
Environ. Research	1972														
Environ. Education	1972												X		
Other (May be more than one)	1971			X								X	X		X
	1972														
By College or University	1971	1	– 7	– 5	5 6	11 14	0 1	14 19	8 8	0 7	8 8	8 10	1 1	9 11	15 13
	1972	4													

Name of College or University		Air Resources	Water Resources	Mineral Resources	Marine Resources	Coastal Zone Mgt.	Nuclear Science	Environmental Health	Family Planning	Nutrition	Pesticides	Toxicology	Solid Waste Mgt.	Transportation	Human or Family Ecol.	Land Use	Community Design	Housing	Urban and/or Regional Planning	Noise-Acoustic Stress	Science & Pub. Policy	Recreation	Environmental Law	Urban Planning	Regional Planning
University of Maryland	1971	X	X		X		X	X	X	X	X					X	X	X	X	X		X		X	X
	1972	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	X	X	X	X			
University of Massachusetts	1971		X		X	X	X	X		X	X					X	X		X			X			
	1972		X		X	X	X	X	X	X	X					X	X		X						
Michigan State University	1971	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	1972	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
University of Michigan	1971		X		X			X	X			X				X	X	X	X	X	X	X		X	X
	1972		X		X			X	X			X				X	X	X	X	X	X	X			
University of Minnesota	1971	X	X	X	X			X	X	X	X	X	X	X		X	X	X	X	X	X	X		X	X
	1972	X	X	X	X			X	X	X	X	X	X	X		X	X	X	X	X	X	X			
Mississippi State University	1971		X		X			X	X	X	X		X			X	X		X	X		X			
	1972		X		X			X	X	X	X		X			X	X		X	X		X			
University of Missouri	1971		X				X	X	X	X		X		X	X		X		X			X	X	X	X
	1972		X				X	X	X	X		X		X	X		X		X			X			
University of Montana	1971															X			X	X	X	X			
	1972															X			X	X	X	X			
University of Nebraska	1971		X				X	X	X	X									X	X		X	X	X	X
	1972		X				X	X	X	X									X	X		X	X		
University of New Hampshire	1971		X	X	X											X	X		X		X	X			
	1972		X	X	X											X	X		X		X	X			
Rutgers University	1971	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X
	1972	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X		
New Mexico State University	1971																								
	1972																								
University of North Carolina	1971	X	X		X					X									X						
	1972	X	X		X					X									X						
University of North Dakota	1971																								
	1972																								
Kent State University	1971									X				X											
	1972									X				X											

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Name of College or University		Air Resources	Water Resources	Mineral Resources	Marine Resources	Coastal Zone Mgt.	Nuclear Science	Environmental Health	Family Planning	Nutrition	Pesticides	Toxicology	Solid Waste Mgt.	Transportation	Human or Family Ecol.	Land Use	Community Design	Housing	Urban and/or Regional Planning	Noise-Acoustic Stress	Science & Pub. Policy	Recreation	Environmental Law	Urban Planning	Regional Planning	Population Control
Miami University	1971																									
	1972																									
Ohio State University	1971	X	X	X			X						X	X		X	X	X	X	X						
	1972	X	X	X																						
Ohio University	1971		X									X			X											
	1972																									
University of Oklahoma	1971	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
	1972																									
Oklahoma State University	1971	X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
	1972																									
Oregon State University	1971	X	X		X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X				
	1972	X	X		X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X				
Pennsylvania State University	1971	X	X	X	X		X	X	X	X	X	X		X		X			X		X				X	
	1972	X	X	X	X		X	X	X	X	X	X		X		X			X		X				X	
University of Puerto Rico	1971															X			X			X				
	1972																									
Clemson University	1971		X																							
	1972																									
University of South Carolina	1971				X								X						X			X				
	1972																									
South Dakota State University	1971	X	X	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X
	1972		X	X																						
University of South Dakota	1971	X	X						X	X	X	X	X	X	X	X	X	X	X	X	X	X				
	1972	X	X					X																		
University of Tennessee	1971		X							X				X					X		X	X				
	1972		X							X																
Texas Technological University	1971		X						X		X	X														
	1972		X																							

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TOTAL UNITS	University of Wisconsin	West Virginia University	University of Washington	Washington State University	Virginia State College	Virginia Polytechnic Inst.	University of Virginia	University of Vermont	Utah State University	University of Texas	Name of College or University	
23	X	X X X	X X X	X X X		X			X X X		1971	Air Resources
29							X			X	1972	
42	X	X X X	X X X	X X X		X X		X X	X X X	X X X	1971	Water Resources
50							X				1972	
11	X			X X X						X X X	1971	Mineral Resources
16							X				1972	
20	X		X X X	X X X			X X X			X X X	1971	Marine Resources
27											1972	
10	X		X X X				X X X			X	1971	Coastal Zone Mgt.
15											1972	
15	X		X X X	X X X		X			X	X	1971	Nuclear Science
21											1972	
23		X X	X X X	X X X		X	X			X	1971	Environmental Health
26					X						1972	
13	X		X X X				X				1971	Family Planning
15											1972	
19	X		X X X	X X X					X X X		1971	Nutrition
26											1972	
15				X X X	X		X		X X X		1971	Pesticides
23											1972	
9		X X X							X X X		1971	Toxicology
15											1972	
18	X	X X X	X X X	X X X		X			X X X	X	1971	Solid Waste Mgt.
24							X				1972	
15			X X X	X X X		X			X X X		1971	Transportation
22							X			X	1972	
7		X X X	X X X		X		X				1971	Human or Family Ecol.
16											1972	
18		X X X	X X X	X X		X	X X		X X		1971	Land Use
32										X	1972	
9			X X X			X					1971	Community Design
15									X	X	1972	
7			X X X	X X		X	X				1971	Housing
11										X	1972	
14			X X X	X		X X			X		1971	Urban and/or
39							X			X	1972	Regional Planning
7			X X X								1971	Noise-Acoustic Stress
14											1972	
14	X		X X X	X X		X	X X				1971	Science & Pub. Policy
18		X			X		X			X	1972	
20	X		X X X	X X		X			X X		1971	Recreation
24							X				1972	
6			X X X								1971	Environmental Law
12			X X X			X					1971	Urban Planning
14			X X X			X					1971	Regional Planning
16	X		X X X								1971	Population Control

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Table 3. Summary of Number and Magnitude of Interdisciplinary Environmental Research Units Reported by State Colleges and Universities in Response to First Questionnaire (1971)

Interdisciplinary Research Unit Name	Number of Institutions With Unit	Total No. in Each Size Category-Fac FTE (Incl. Postdoc. Res. Assoc.) <3	<6	<9	<12	>12	Total No. of Grad. Students	Total No. in Each Support Category (Thousands of Dollars) ≤100	100-250	250-500	500-1000	>1000
Water Resources	42	11	7	8	4	10	575	7	15	6	3	3
Air Resources	23	5	4	3	3	4	249	7	6	0	4	1
Environmental Health	23	1	8	4	1	5	258	8	4	3	1	1
Recreation	20	10	6	2	1	0	120	12	3	1	0	0
Marine Resources	20	2	6	3	1	5	503	5	4	3	3	2
Solid Waste Mgt.	19	8	4	3	0	2	73	5	4	1	0	2
Nutrition	19	2	6	2	2	5	181	5	5	2	0	1
Land Use	18	4	5	2	2	2	66	8	2	1	0	0
Population Control	17	6	4	2	0	3	96	7	3	0	2	0
Transportation	15	4	3	3	0	2	92	7	1	0	3	0
Nuclear Science	15	1	3	3	2	1	41	2	1	5	1	1
Pesticides	15	2	2	5	3	2	120	5	3	2	2	1
Science & Pub. Policy	14	7	2	1	2	2	84	7	4	1	0	0
Urban & Reg. Planning	14	2	3	3	2	3	148	4	2	4	0	0
Regional Planning	14	4	5	0	3	1	115	6	2	0	0	1
Urban Planning	12	1	4	2	3	1	177	3	4	0	0	2
Family Planning	12	4	2	3	0	3	78	4	2	0	2	0
Mineral Resources	11	4	2	1	1	2	48	4	2	1	1	0
Coastal Zone Mgt.	11	2	2	0	1	2	85	3	2	1	0	1
Toxicology	9	2	3	0	0	2	60	3	1	1	1	0
Community Design	9	1	3	3	0	0	54	6	1	0	0	0
Noise-Acoustic Stress	7	2	4	0	0	0	15	4	0	0	0	0
Human or Family Ecol.	7	1	2	0	1	2	125	2	0	1	0	0
Environmental Law	6	3	2	1	0	0	7	2	0	0	0	0
Housing	6	1	2	0	1	0	19	3	0	0	0	0
All Others Combined	19*	3	7	2	1	4	331	5	6	3	1	1
TOTALS	397	93	101	56	34	63	3,720	134	77	36	24	17

*Nineteen universities responded for a total of 33 "other" units.

Table 4. Summary of Number and Magnitude of Interdisciplinary Environmental Research Units Reported by State Colleges and Universities in Response to Second Questionnaire (1972)

Interdisciplinary Research Unit Name	Number of Institutions With Unit	Total No. in Each Size Category-Fac. FTE (Incl. Postdoc. Res. Assoc.) <3	<6	<9	<12	>12	Total No. of Grad. Students	Total No. in Each Support Category (Thousands of Dollars) <100	100-250	250-500	500-1000	>1000
Water Resources	50	9	15	8	1	12	638	10	22	7	3	3
Urban or Reg. Planning	39	6	13	8	4	6	601	16	4	7	0	2
Land Use	32	9	7	7	4	3	125	16	6	1	0	0
Air Resources	29	6	7	5	3	5	247	7	8	1	3	2
Marine Resources	27	2	5	6	4	9	612	4	2	5	3	4
Environmental Health	26	1	8	5	1	5	317	8	5	2	2	2
Nutrition	26	1	7	5	3	7	283	9	5	2	1	0
Solid Waste Mgt.	24	9	7	4	1	2	104	11	2	2	0	1
Recreation	24	10	8	3	1	2	168	14	4	1	0	0
Pesticides	23	5	6	3	6	3	139	6	2	6	2	1
Transportation	22	8	6	3	2	2	108	8	4	2	2	0
Nuclear Science	21	1	5	3	6	2	232	2	5	5	2	1
Science & Pub. Policy	18	7	5	2	2	0	56	5	7	0	1	1
Mineral Resources	16	4	2	3	1	5	142	4	4	2	2	0
Human Ecology	16	6	5	1	2	1	146	6	2	1	0	0
Family Planning	15	4	4	2	2	2	102	5	2	0	0	2
Coastal Zone Mgt.	15	4	4	3	1	0	59	5	1	4	2	0
Toxicology	15	3	7	1	1	3	67	3	3	1	2	0
Community Design	15	4	3	3	2	1	71	7	2	0	0	0
Noise-Acoustic Stress	14	6	6	0	1	0	23	6	1	0	0	0
Remote Sensing	13	2	4	2	1	3	83	3	3	1	2	1
Housing	11	3	2	1	2	0	35	5	2	0	0	0
Environmental Resources	6	0	2	2	0	2	2	0	1	2	0	1
Environmental Research	3	2	1	0	0	0	8	2	1	0	0	0
Environmental Education	1	1	0	0	0	0	0	1	0	0	0	0
All Others Combined	31*	6	11	3	3	4	294	8	9	5	2	1
TOTALS	532	119	150	83	54	79	4,662	171	107	57	29	22

*Thirty-one universities responded for a total of 38 "other" units.